

周报

定义

相同的点，随时间变化的拓扑结构。可以称为Dynamic Pattern。

A-A-A-B-A-A-A这种情况下B处叫Event

A-A-A-B-B-B-B这种情况下B处叫Change

1. 检测点在不同时间上拓扑的变化（稳定，剧烈变化）
2. 哪些点组成的拓扑结构的是一直不变的。
 1. 例如哪些教授的合作关系一直不变
 2. 邮件数据中哪些人群的一直都有联络，比如一个团队leader一直和大家联系，找到这样的leader
 3. nba球队中那些人一直在一起打球
 4. 通信网络中，哪些人群一直互相发消息，关系稳定
 5. **网络侵入数据**
3. 哪些点组成的拓扑结构突然发生了变化。
 1. 教授合作模式突然变化：有些人进军新的领域
 2. NBA中球队的交易，重建
 3. 网络侵入

Paper

这是一部分吧

- Analyzing Conversations with Dynamic Graph Visualization
 - 检测的pattern，社团，连接紧密，一些特殊star啥的
- Visual analysis of large-scale network anomalies
 - 可视化可以帮助人在检测到传统自动化方法找不到pattern；
 - 特定任务的pattern（sending patterns）
 - broadcasting pattern
 - dynamic patterns of the attacker
 - 每个点矩阵的一行，表示这个点的connection pattern
- TimeCrunch: Interpretable Dynamic Graph Summarization
 - focuses on interpretable structures, which may not appear at every timestep.
 - find static subgraphs which have the same patterns of connectivity over one or more timesteps and stitch them together.
 - 相关工作部分，temporal graph mining

- anomaly detection
 - dense temporal cliques and bipartite cores
 - dense blocks
 - cross-graph quasi-cliques (not temporal)
 - stable clusters
- VIGOR: Interactive Visual Exploration of Graph Query Results
 - 基于embedding, 静态图,
 - 讲了一些静态图pattern: similar disease-gene patterns
 -
- g-Miner: Interactive Visual Group Mining on Multivariate Graphs
 - 交互式定义一个group
 - 基于模板
 - 随便圈选
 - 一个人的egonetwork
 - 搜索相似
 - group的定义?
- ContextTour: Contextual Contour Visual Analysis on Dynamic MultiRelational Clustering
 - community evolution
- Pattern Mining in Dynamic Graphs
 - In this thesis proposal, our main focus is on specific type of patterns: graph rules. More specifically, we focus on special class of graph rules, called predictive graph rules, Predictive graph rules are useful for a number of reasons. First, extracted rules can help with the interpretation of dynamic graphs. We can investigate processes in dynamic graphs at the local level using such patterns. This can be regarded as an exploratory analysis of dynamic graphs. Next, these graph patterns can be exploited for other tasks of data mining and machine learning. Frequently occurring patterns are appropriate for characterization of graphs. Thus, each dynamic graph, or part of a dynamic graph, can be represented by a set of patterns occurring in it. This leads to an attribute-value representation, which is supported by a lot of algorithms for classification, clustering, anomaly detection, etc. Anomaly detection plays a special role in this enumeration of data mining tasks as it can be performed on the basis of rarely occurring patterns. And finally, predictive graph rules can be, of course, also used for prediction in dynamic graphs.
 - 一些 motif
 - graph rules
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- Mining Regular Patterns in Weighted-Directed Networks
 - 找普通的模式的缺点
- Pattern Mining in Frequent Dynamic Subgraphs
- DYREP: LEARNING REPRESENTATIONS OVER DYNAMIC GRAPHS
 - Datasets
 - Social Dataset is a small network with high clustering coefficient and over 2M events. In contrast, Github dataset forms a large network with low clustering coefficient and sparse events thus allowing us to test the robustness of our model
 - Dynamic Link Prediction
 - Event Time Prediction

- Anomaly detection in dynamic networks: a survey
 - 提供了异常检测的简单定义
 - 动态图异常检测的简单定义和举例
 - *Event and Change Detection*
- Intrusion as (Anti)social Communication: Characterization and Detection
 - 特定网络二部图的定义